

We Claim:

Sub 1
1. A method for preventing the growth of microorganisms other than *Salmonella* on meat products comprising:

5 contacting said meat product with a microbial growth inhibiting effective amount of a quaternary ammonium compound for a sufficient period of time to prevent the growth of microorganisms other than *Salmonella* on said meat product.

10 2. The method of Claim 1, wherein said microorganisms are bacteria, fungi, or parasites.

15 3. The method of Claim 2, wherein said bacteria are selected from the group consisting of *Staphylococcus*, *Campylobacter*, *Arcobacter*, *Listeria*, *Aeromonas*, *Bacillus*, non-toxin producing *Escherichia*, and pathogenic toxin-producing *Escherichia*.

4. The method of Claim 3, wherein said pathogenic toxin-producing *Escherichia* is *Escherichia coli* O157:H7.

20 5. The method of Claim 1, wherein said quaternary ammonium compound is selected from the group consisting of alkylpyridinium, tetra-alkylammonium, and alkylalicyclic ammonium salts.

Subst B2
6. The method of Claim 5, wherein said quaternary ammonium compound is alkylpyridinium.

25 7. The method of Claim 6, wherein said alkylpyridinium is cetylpyridinium chloride.

Sub A2
8. The method of Claim 1, wherein said microbial growth inhibiting effective amount of quaternary ammonium compound ranges from approximately 50 to 20,000 parts per million.

Sub
a2
9. The method of Claim 1, wherein said microbial growth inhibiting effective amount of quaternary ammonium compound ranges from approximately 500 to 5,000 parts per million.

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10. The method of Claim 1, wherein said contacting comprises immersing said meat product into said quaternary ammonium compound.

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11. The method of Claim 10, wherein said contacting comprises spraying said meat product with said quaternary ammonium compound.

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10 12. The method of Claim 11, wherein said sufficient period of contact time ranges from approximately 20 seconds to about less than 10 minutes.

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15 13. The method of Claim 1, further comprising determining the presence of said quaternary ammonium compound on said meat product after said contacting step.

Subst
B3
20 14. A method for preventing the growth of microorganisms on seafood, vegetables or fruit products comprising:
contacting said seafood, vegetables, or fruit products with a microbial growth inhibiting effective amount of a quaternary ammonium compound for a sufficient period of time to prevent the growth of said microorganisms on said seafood, vegetables or fruit products.

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25 15. The method of Claim 14, wherein said microorganisms are bacteria, fungi, or parasites.

Sub
a3
30 16. The method of Claim 15, wherein said microorganisms are selected from the group consisting of *Salmonella*, *Staphylococcus*, *Campylobacter*, *Arcobacter*, *Listeria*, *Aeromonas*, *Bacillus*, non-toxin producing *Escherichia*, and pathogenic toxin-producing *Escherichia*.

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17. The method of Claim ¹⁴16, wherein said pathogenic toxin producing *Escherichia* is *Escherichia coli* O157:H7.

5 18. The method of Claim 14, wherein said quaternary ammonium compound is selected from the group consisting of alkyipyridinium, tetra-alkylammonium, and alkylalicyclic ammonium salts.

Subst B4
19. The method of Claim 18, wherein said quaternary ammonium compound is alkyipyridinium.

10 20. The method of Claim 19, wherein said alkyipyridinium is cetylpyridinium chloride.

sub alt
21. The method of Claim 14, wherein said microbial growth inhibiting effective amount of quaternary ammonium compound ranges from approximately 50 to 20,000 parts per million.

15 22. The method of Claim 21, wherein said microbial growth inhibiting effective amount of quaternary ammonium compound ranges from approximately 500 to 5,000 parts per million.

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23. The method of Claim ¹²14, wherein said contacting comprises immersing said seafood, vegetable or fruit product in said quaternary ammonium compound.

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24. The method of Claim ¹²14, wherein said contacting comprises spraying said seafood, vegetable, or fruit product with said quaternary ammonium compound.

sub alt
25 25. The method of Claim 24, wherein said sufficient period of contact time ranges from approximately 20 seconds to about 10 minutes.

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26. The method of Claim 14, further comprising determining the presence of said quaternary ammonium compound on said food product after said contacting step.

27. A concentrated composition for use after dilution in the removal and inhibition of attachment of food borne microorganisms on food products comprising:

a concentrated amount of a quaternary ammonium compound ranging from approximately 100,000 parts per million to about 300,000 parts per million;
and
at least one solubility enhancing agent.

28. The composition of Claim 27, wherein said solubility enhancing agent is ethyl alcohol or glycerin.

29. The composition of Claim 28, wherein said ethyl alcohol is present from approximately 0 to about 49 % and said glycerin is present from approximately 0 to about 20% glycerin.

30. A composition for the removal and inhibition of attachment of food borne microorganisms on food products comprising:

an effective amount of a quaternary ammonium compound ranging from approximately 50 parts per million to about 20,000 parts per million, and
at least one solubility enhancing agent selected from the group consisting of glycerin ranging from approximately 0 to about 20%, and ethyl alcohol ranging from approximately 0 to about 10%.

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